

What is claimed is:

1. A digital imaging apparatus comprising:

a main storage unit for storing a firmware for at least two data transfer modes for transmitting image data acquired through a camera to an external device in different manners, respectively, and also for storing a descriptor including information for identifying the firmware;

a mode selection unit for outputting a mode selection signal for a certain transfer mode for the at least two data transfer modes;

a transmitting module for connecting to the external device to transmit the image data to the external device, the transmitting module sending the image data in different data transfer manners for each data transfer mode; and

a controlling unit which controls the transmitting module so as to set the transfer manner corresponding to the selected certain transfer mode if the mode selection signal is received from the mode selection unit, and reads out descriptor of firmware corresponding to the selected transfer mode from the main storage unit and provides the descriptor to the transmitting module if the transmitting module is connected to the external device,

wherein the controlling unit allows the read descriptor of the firmware to transmit if a transfer allowance command is received from the external device.

2. The apparatus of claim 1, further comprising a sub-storage unit for storing the image data picked up through the camera,

wherein the at least two data transfer modes include a first mode wherein the image data being currently acquired through the camera is transmitted to the external device in a real-time data stream, and a second mode wherein the image data stored in the sub-storage unit is transmitted to the external device, the main storage unit storing each of the firmware corresponding to the first mode and the second mode and the identifying information.

3. The apparatus of claim 2, further comprising

an on screen display (OSD) processing unit for OSD-processing a data transfer mode selection screen for selecting the certain transfer mode of the first mode and the second mode, and outputs the result of the processing;

a display unit for displaying the OSD processed data transfer mode selection screen;
and

a display request unit for generating a display request signal on the data transfer mode selection screen,

wherein if the display request signal is received from the display request unit, the controlling unit OSD-processes and displays the data transfer mode selection screen on the display unit, and receives the mode selection signal for the transfer mode selected by the mode selection unit at the displayed data transfer mode selection screen.

4. The apparatus of claim 3, wherein the transmitting module comprises:

a first-in first-out (FIFO) which is divided into a plurality of temporary storage areas, and the image data for sending to the external device and the descriptor corresponding to the selected transfer mode are temporarily stored in at least one of the temporary storage areas;

a provision unit for providing a plurality of endpoints corresponding to the plurality of temporary storage areas; and

a communication controller that selects at least three endpoints out of the plurality of the endpoints and sets the transfer manner for transferring the image data for each of the selected endpoints, and that allows the image data temporarily stored in the temporary storage areas corresponding to the selected endpoint to be sent to the external device according to the transfer type set.

5. The apparatus of claim 4, wherein if the first mode is selected by the mode selection unit, the communication controller selects endpoint numbers 0 to 2 among the plurality of endpoints, and if the second mode is selected by the mode selection unit, the communication controller selects endpoints numbers 0, 2, and 3 among the plurality of endpoints, and setting the transfer manner for each of the selected endpoints.

6. The apparatus of claim 1, wherein the transmitting module is a universal serial bus interface, and the identifying information of the firmware is stored in the location of offset 10 of the descriptor in the size of two data bytes.

7. The apparatus of claim 2, wherein if the external device and the transmitting module are connected with each other, the sub storage unit is recognized as an accessible movable disc in the external device.

8. A method for selecting data transfer mode of a digital imaging apparatus comprising the steps of:

storing image data being acquired through a camera;

selecting a certain mode of at least two modes for transferring the image data acquired through the camera to an external device in different manners;

connecting to the external device via a transmitting module so as to communicate with the external device after the certain transfer mode is selected;

receiving a transfer allowance command on a descriptor from the external device; and

transferring the descriptor including identifying information of firmware corresponding to the selected transfer mode to the external device.

9. The method of claim 8, wherein each of the firmware for the at least two transfer modes and each of the descriptors including the identifying information of the firmware are stored, respectively, the identifying information being stored in the location of offset 10 of the descriptor in the size of two data bytes.

10. The method of claim 8, prior to the step of selecting the certain transfer mode, further comprising the steps of:

generating a display request command for a data transfer mode selection screen selectable the certain transfer mode of the at least two modes; and

if the display request command is generated, on screen display (OSD)-processing the data transfer mode selection screen, thereby displaying the OSD-processed data transfer mode selection screen,

wherein the step of selecting the certain transfer mode selects the certain transfer mode from the OSD-processed data transfer mode selection screen.

11. The method of claim 8, wherein the at least two data transfer modes includes a first mode wherein the image data being currently acquired through the camera is transferred to the external device in a real-time data stream, and a second mode wherein the

image data stored in the storage step is transferred to the external device, the firmware and the descriptor corresponding to the first mode and the second mode being stored, respectively.

12. The method of claim 11, after the step of selecting the certain transfer mode, further comprising the steps of:

selecting at least three endpoints for transferring image data corresponding to the selected transfer mode;

setting a transfer type for transferring the image data for each of the selected three endpoints;

after connecting to the external device, transferring the descriptor corresponding to the selected transfer mode to the external device;

receiving a run command on the selected transfer mode from the external device;

dividing the image data into a prescribed packet size and temporarily storing the divided image data in three temporary storage areas corresponding to the selected three endpoints; and

transferring the temporarily stored image data to the external device according to the set transfer type.

13. The method of claim 12, wherein, in the endpoint selection step, if the first mode is selected in the mode selection step, endpoints numbers 0 to 2 are selected; and if the second mode is selected, endpoints numbers 0, 2 and 3 are selected.

14. The method of claim 8 wherein the transmitting module is a universal serial bus interface.

15. A digital imaging apparatus for transferring image data being acquired through a camera to external device connected via a transmitting module, comprising:

a sub-storage unit for storing the image data being acquired through the camera;

a main storage unit for storing a firmware for a first mode wherein the image data being currently acquired through the camera is sent to the external device in a real-time stream and a firmware for a second mode wherein the image data stored in the sub-storage unit is sent to the external device;

a mode selection unit for applying a mode selection signal for a certain transfer mode of the first mode and the second mode; and

a controlling unit that allows identifying information of firmware corresponding to the selected certain mode to be transferred to the external device, if the mode selection signal is received from the mode selection unit and the transmitting module is connected to the external device.

16. The apparatus of claim 15, further comprising:

an on screen display (OSD) processing unit for OSD-processing a data transfer mode selection screen for selecting the certain transfer mode of the first mode and the second mode and outputs the result of processing;

a display unit for displaying the OSD-processed data transfer mode selection screen; and

a display request unit for generating a display request signal on the data transfer mode selection screen,

wherein if the display request signal is received from the display request unit, the controlling unit OSD-processes and displays the data transfer mode selection screen on the display unit, and the mode selection unit outputs the mode selection signal to the controlling unit by selecting the certain mode of the data transfer mode selection screen displayed on the display unit.

17. The apparatus of claim 15, wherein the transmitting module is applied with a universal serial bus interface.

18. The apparatus of claim 15, wherein if the identifying information of the firmware is transferred to the external device and the execution command for the selected certain mode is received from the external device, the controlling unit allows the firmware corresponding to the selected certain mode to be executed.

19. The apparatus of claim 15, wherein if the external device and the transmitting module are connected with each other, the sub-storage unit is recognized as an accessible movable disc in the external device.

20. A method for selecting data transfer mode of a digital imaging apparatus transferring image data being acquired through a camera to an external device connected via a transmitting module comprising the steps of:

storing the image data being acquired through the camera;

selecting a certain mode among a first mode wherein the image data being currently picked up through the camera is send to the external device in a real-time data streaming and a second mode wherein the image data that is stored in advance is send to the external device; and

if the certain mode is selected and the external device and the transmitting module are connected with each other to perform data communication, transferring the identifying information of firmware corresponding to the selected certain mode to the external device.

21. The method of claim 20, wherein, prior to the step of selecting the certain mode, further comprising the steps of:

generating a display request command for a data transfer mode selection screen selectable the certain mode of the first mode and the second mode; and

if the display request command is generated, on screen display (OSD)-processing the data transfer mode selection screen, thereby displaying the OSD-processed data transfer mode selection screen,

wherein the step of selecting the certain mode selects the certain mode from the OSD-processed data transfer mode selection screen.

22. The method of claim 20, wherein the transmitting module is applied with a universal serial bus interface.

23. The method of claim 20, further comprising the step of:

after the step of transferring the identifying information of the firmware to the external device, receiving the execution command for the selected certain mode from the external device; and

executing firmware corresponding to the selected certain mode.